

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-2T-41-51-52-
53, VOLUME 3**



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Flying Operations

***T-41, T-51, T-52, AND T-53 OPERATIONS
PROCEDURES***

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This instruction implements AFPD 11-2, *Aircraft Rules and Procedures*, and AFI 11-202, Volume 3, *General Flight Rules*. Along with major command (MAJCOM) and local procedures, this instruction prescribes standard procedures used by all pilots operating an Air Force T-41, T-51, T-52, or T-53 aircraft. This instruction applies to the Air National Guard (ANG). With the exception of the associate instructor pilot (IP) program, this instruction does not apply to the Air Force Reserve Command. Requests for waivers must be submitted through the chain of command to the appropriate Tier waiver approval authority, and filed in accordance with AFI 33-360. According to AFI 11-200, MAJCOMs will coordinate MAJCOM-level supplements through AETC/A3V, and AFFSA/XOF prior to publication. (T-1). Field units below MAJCOM level will coordinate their supplements through their parent MAJCOM office of primary responsibility (OPR) prior to publication. Submit suggested improvements to this instruction on AF Form 847, *Recommendation for Change of Publication*, to the parent MAJCOM through standardization/evaluation channels to AETC/A3V. (T-1). AF/A3 is the approval authority for changes or revisions to this instruction. Attachment 1 contains a glossary of the references and supporting information used in this publication. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). (T-1). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This revision implements Tier waiver authorities IAW AFI 33-360 and contains administrative updates for the OPR change and references.

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Chapter 1

GENERAL INFORMATION

1.1. Scope. This instruction outlines the procedures applicable to the safe operation of the aircraft. Along with the complementary references cited, this instruction prescribes standard operational procedures to be used by all pilots operating the aircraft. Certain procedures may be identified as only applicable to or not applicable (NA) to the ANG. Units will provide local operating procedures in a supplement to this publication. (T-2). **Note:** Service contracts may further restrict operations.

1.2. Pilot's Responsibility. In conjunction with other governing directives, this instruction prescribes procedures under most circumstances, but is not to be used as a substitute for sound judgment or common sense. The pilot in command (PIC) is ultimately responsible for the safe and effective operation of the aircraft and will ensure all occupants of the aircraft comply with this directive.

1.3. Deviations. Do not deviate from the procedures and guidance in this publication except when necessary to preserve safety or protect lives. In that case, the PIC has ultimate authority and responsibility for the course of action to be taken and will take the appropriate action to safely recover the aircraft. Report all deviations without waiver through channels to the MAJCOM OPR. (T-2).

1.4. References. The primary references for aircraft operations are this instruction and technical orders (TO) 1T-41D-1, *Flight Manual, USAF T-41D Series Aircraft*, TO 1T-51A-1, *Flight Manual, USAF T-51A Series Aircraft*, TO 1T-53-1, *Flight Manual, USAF T-53 Series Aircraft*, or TO 1T-52A-1, *Flight Manual, USAF T-52A Series Aircraft*. Training units may develop phase manuals from the procedures contained in these documents. Phase manuals may be used to augment initial and mission qualification training. They may expand these basic procedures, but will not be less restrictive. (T-2). Only maneuvers described in these references will be flown.

1.5. Crew Requirements. The minimum crew for the T-41 or T-51 is one pilot in the left seat. The minimum crew for the T-52 or T-53 is one pilot. All aircrew members will be qualified according to AFI 11-2T-41-51-52-53, Volume 1, *T-41, T-51, T-52, and T-53 Aircrew Training*. (T-2).

1.6. Maximum Flight Duty Period Flight Time. AFI 11-202, Volume 3, lists maximum flight duty periods.

1.6.1. Units will consider the aircraft as "trainer" type aircraft.

1.6.2. Use of additional crewmembers to extend the flight duty period (augmented crew) is not authorized.

1.7. Clothing Requirements. AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*, prescribes minimum aircrew clothing requirements. In the absence of specific guidance, all aircrew members will wear flight suits and flight boots, or MAJCOM-approved uniforms while operating the aircraft. (T-2).

1.7.1. Aircrew will carry appropriate seasonal flight clothing. Aircrew members will remove rings and scarves before performing aircrew duties.

1.7.2. Aircrew will wear flight gloves during ground operations, except when straining fuel, and during departures, recoveries, and critical phases of flight.

1.8. Seatbelts and Shoulder Harnesses. All occupants will wear seatbelt and shoulder harnesses (front seats only) at all times while operating the aircraft. (T-2).

1.9. Oxygen Requirements. The PIC will ensure oxygen is used in accordance with AFI 11-202, Volume 3. Units will ensure only certified personnel service oxygen equipment. (T-2). Pilots on supplemental oxygen will perform a pressure, regulator, indicator, connections, and emergency (PRICE) check every 30 minutes.

1.10. Cargo Restrictions. None.

1.11. Interfly. Interfly requires approval of both operations group commanders and notification of the appropriate numbered AF and MAJCOM standardization and evaluation office. (T-2).

1.12. Aerial Events. Units will conduct aerial events in accordance with AFI 11-209, *Aerial Event Policy and Procedures*. (T-2).

Chapter 2

MISSION PLANNING

2.1. Responsibilities. The individual pilots and the operations functions of the organizations jointly share responsibility of mission planning. The PIC is ultimately responsible for mission planning.

2.2. General Procedures. The pilots will:

2.2.1. Accomplish sufficient flight planning to ensure safe mission accomplishment. (T-2). AFI 11-202, Volume 3, and this instruction specify minimum requirements.

2.2.2. Compute or obtain weight and balance, and takeoff and landing performance for each flight. MAJCOM-approved tabulated data may be used when available. (T-2).

2.2.3. Ensure all passengers are manifested in accordance with AFI 11-202, Volume 3. (T-2).

2.2.4. **(NA to ANG)** Only file visual flight rules (VFR) flight plans according to AFI 11-202, Volume 3. (T-2).

2.3. Briefings and Debriefings. The PIC is responsible for presenting a logical briefing that promotes safe, effective mission accomplishment. All pilots will attend the flight briefing and debriefing. (T-2). The PIC will structure the flight briefing to accommodate the capabilities of each pilot. (T-2). Passengers will be briefed on their specific responsibilities related to safe mission accomplishment. (T-2). On subsequent flights during the same day with the same crew, the PIC must brief only those items that have changed from the previous flights. (T-2).

2.3.1. Briefing Guides:

2.3.1.1. All missions will be briefed and debriefed, using the applicable briefing guide as a reference (**Attachments 2 and 3**). (T-2). **Note:** Briefing guides are reference lists of items that may apply to particular missions.

2.3.1.2. Items listed may be briefed in any sequence. Those items covered by phase manuals or written squadron standards, and understood by all participants may be briefed as “standard.” Each guide may be expanded as necessary to cover other important items of the flight. Brief only those items applicable to the particular mission and in sufficient detail to prevent any misunderstanding between crewmembers.

2.3.2. Alternate Missions:

2.3.2.1. Pilots will brief an alternate mission profile for each flight. The alternate mission will be less complex than the primary mission. **Exception:** If the primary mission is a pattern-only sortie, an alternate mission is not required. (T-2).

2.3.2.2. Missions or events not briefed will not be flown. Solo student pilots will not deviate from the briefed primary or alternate mission profile. Mission elements or events may be briefed airborne if it is practical to do so and flight safety is not compromised.

2.4. Maps and Charts:

2.4.1. A local sectional and VFR terminal area charts must be on board the aircraft. (T-2). When flying outside the local area, appropriate charts covering the route of flight must be on board the aircraft. (T-2). Current charts produced by Falcon View may be substituted.

2.4.2. Pilots will ensure low-level charts or route books identify the location and dimensions of class A, class B, class C, and class D airspace; civil and military airfields; and other potential high density traffic areas (restricted areas, military operating areas, alert areas, parachute activity areas, and ultra light, hang glider, or glider sites, etc.) within 5 nautical miles (nm) of any planned route. (T-2). Pilots will annotate and brief applicable airfield approach control and tower frequencies, and the intersections of published military training routes. (T-2).

2.5. Required Documents. The following documents must be on board for flight (T-2):

2.5.1. Aircraft weight and balance report.

2.5.2. Airworthiness certificate.

2.5.3. Aircraft registration.

2.5.4. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*. (**Note:** AFTO Form 781 is prescribed in AFI 11-401, *Aviation Management*. Refer to that publication for guidance on filling out the form.)

2.5.5. TO 1T-41D-1CL-1, *Pilot's Abbreviated Flight Crew Checklist USAF T-41D Series Aircraft*, TO 1T-51A-1CL-1, *Pilot's Abbreviated Flight Crew Checklist, USAF T-51A Series Aircraft*, TO 1T-53-1CL-1, *Pilot's Abbreviated Flight Crew Checklist USAF T-53 Series Aircraft*, or TO 1T-52A-1CL-1, *Pilot's Abbreviated Flight Crew Checklist, USAF Series T-52A Aircraft*.

2.5.6. A unit-developed pilot aid according to [paragraph 2.6.2](#) of this instruction.

2.5.7. Applicable airport information.

2.5.8. AFI 11-2T-41-51-52, Volume 3, CL-1, *T-41, T-51, and T-52 Aircrew Supplemental Oxygen Checklist* (when supplemental oxygen is used).

2.6. Unit-Developed Checklists and Pilot Aids:

2.6.1. When aircrew use unit-developed checklists in lieu of flight manual checklists (according to AFI 11-215, *USAF Flight Manuals Program (FMP)*), the checklists must contain, as a minimum, all items (verbatim and in order) listed in the applicable flight manual checklist. (T-2). Crewmembers will still carry a current flight manual checklist ([paragraph 2.5.5](#)) and have it immediately available on all flights.

2.6.2. Unit-developed pilot aids will include as a minimum, the following items (T-2):

2.6.2.1. Briefing guides.

2.6.2.2. Local radio frequencies.

2.6.2.3. Appropriate airfield diagrams, including aircraft arresting systems.

2.6.2.4. Emergency information, including impoundment procedures, emergency action checklists, lost communications procedures, and diversion information.

2.6.2.5. Cross-country procedures, including command and control, aircraft security, and aircraft servicing.

2.6.2.6. Local training areas.

2.6.2.7. Stereo flight plans.

2.6.2.8. Other information deemed necessary by the local unit.

Chapter 3

NORMAL OPERATING PROCEDURES

3.1. Preflight:

3.1.1. **Required Equipment.** Chapter 4 specifies the minimum equipment required for flight.

3.1.2. **Aircraft Systems.** Students will not fly solo in aircraft requiring an operational check. Pilots may perform operational checks during dual student training sorties if the checks do not interfere with training objectives.

3.1.3. **Foreign Object Damage (FOD).** To reduce the risk of FOD and personal injury, personnel will ensure loose items are secured in the cockpit at all times.

3.1.4. Preflight Inspections:

3.1.4.1. If the issued survival kit is missing or its inspections is overdue, contact Aircrew Flight Equipment. Normal Aircrew Flight Equipment procedures will be followed IAW AFI 11-301V2 AETC Supplement.

3.1.4.2. Visually check fuel quantity prior to every flight. Check fuel samples for impurities and proper type after every refueling and before the first flight of the day. Fuel should be allowed to settle for 30 minutes to an hour to obtain the most valid sampling. If the sample is good, pour back into tank or follow local procedures for sump fuel. If the sample is bad, immediately contact local refueling and maintenance personnel.

3.1.4.3. Pilots will not hand-prop the aircraft. If the pilot confirms the master and ignition switches are off with the ignition key removed, the propeller may be turned to facilitate ground handling or to loosen congealed oil prior to cold starts. This does not constitute hand-propping.

3.1.4.4. If the aircraft requires the use of external power to start the engine for the first sortie of the day, personnel will notify maintenance and make an entry in the AFTO Form 781A, *Maintenance Discrepancy and Work Document*. Only maintenance personnel will connect and disconnect the external power source. If the aircraft requires the use of external power to start on any subsequent flight, abort the aircraft and make an entry in the AFTO Form 781A.

3.1.4.5. Aircraft remaining off-station overnight will carry chocks, tie-downs, and extra engine oil.

3.2. Ground and Taxi Operations:

3.2.1. **Refueling Operations.** Personnel not actively involved in refueling will remain at least 50 feet away from an aircraft refueling operation. In addition, do not operate the engine, taxi, or radiate electromagnetic energy (radio, distance measuring equipment [DME], cell phones, or transponder operation) within the 50 feet safety zone.

3.2.2. Ground Handling:

3.2.2.1. Pilots will ground handle the aircraft whenever minimum wingtip clearances will be compromised during taxi.

3.2.2.2. A qualified pilot or maintenance personnel must supervise ground handling. **Note:** Personnel will use extreme caution when ground handling aircraft. Improper ground handling may result in structural damage.

3.2.2.3. Do not use the empennage (tail section) to ground handle or turn the T-41 or T-51.

3.2.3. Prior to Starting Engine:

3.2.3.1. Pilots will ensure a fire bottle is in the vicinity prior to engine start.

3.2.3.2. When starting behind another aircraft, pilots will ensure a minimum of 10 feet nose-to-tail separation.

3.2.4. Engine Start:

3.2.4.1. A qualified pilot or maintenance personnel will perform all engine starts. **Exception:** Student pilots may start the engine under the supervision of an IP.

3.2.4.2. If the engine fails after warmup for no apparent reason, abort the aircraft. Enter all engine failures or abnormalities on the AFTO Form 781A to include the total time the engine ran.

3.2.5. After Engine Start. Pilots will:

3.2.5.1. Not onload or offload personnel or equipment while the engine is running.

3.2.5.2. Use proper tailwind, headwind, and crosswind control inputs while taxiing. Use caution to avoid upsets due to strong jet or propeller blast from larger aircraft. If aircraft control is lost during taxi, the pilot will immediately shut down the engine.

3.2.5.3. Avoid taxiing through snowdrifts and significant accumulations of ice. To avoid damage to the propeller, pilots will plan to taxi around gravel and puddles of water and avoid high power settings on the ground (greater than 1500 RPM) when possible. When damage to the prop tips is likely, pilots will maintain full aft elevator control unless wind conditions dictate otherwise.

3.2.5.4. Avoid rolling over any cables or arresting gear during taxi, takeoff, or landing.

3.2.6. Minimum Spacing and Taxi Interval. Comply with the minimum taxi clearances in AFI 11-218, *Aircraft Operations and Movement on the Ground*. In addition, maintain:

3.2.6.1. At least 50 feet behind light single-engine aircraft.

3.2.6.2. At least 100 feet behind multi-engine or jet aircraft.

3.2.6.3. A minimum of 500 feet behind taxiing helicopters.

3.2.7. Wind Limitations. When the wind exceeds 35 knots, pilots will turn the aircraft into the wind and cease all taxi operations. If a tow is required, shutdown the engine, set the parking brake, and wait for the tow to arrive.

3.2.8. **Engine Runup.** Do not perform an engine runup while an aircraft is stopped or taxiing in front of your aircraft. Do not taxi in front of another aircraft performing an engine runup.

3.3. Takeoff and Landing:

3.3.1. Runway:

3.3.1.1. All takeoffs and landings require prepared surface runways. The minimum runway required for normal operations is 2,500 by 40 feet or the sum of the takeoff and landing rolls, whichever is greater.

3.3.1.1.1. Do not take any headwind component into account when computing takeoff and landing distances. The squadron commander may approve operations considering up to one half of the steady state headwind component to compute takeoff and landing distances.

3.3.1.1.2. Do not consider runway prior to above-ground aircraft arresting cables as usable for takeoff. Do not consider runway after above-ground aircraft arresting cables as usable for landing. The OG commander may approve operations on shorter runways when the takeoff and landing distances do not exceed 80 percent of the usable runway.

3.3.1.2. Do not take off or land over a raised web barrier (for example, MA-1A or BAK-15) unless the minimum runway and the planned rate of climb will clear the barrier by 35 feet.

3.3.1.3. Intersection takeoffs are approved as long as the usable runway remaining meets the minimum requirements of **paragraph 3.3.1.1**. When aircrews use less than the entire runway for takeoff, base takeoff data calculations on the actual runway remaining from the point where takeoff starts.

3.3.1.4. The minimum runway condition reading (RCR) for takeoff or landing is 12. In the absence of RCR, pilots will use braking action reports to determine runway condition. Pilots will not takeoff or land with braking action reported as poor. Pilots will not take off or land if the existing crosswind component exceeds the RCR.

3.3.2. Weather Requirements:

3.3.2.1. The maximum density altitude for T-41 takeoffs above 2,350 pounds gross weight is 9,500 ft.

3.3.2.2. The maximum density altitude for T-51, T-52, or T-53 takeoffs is 10,000 feet.

3.3.3. **Minimum Runway Spacing.** Reduced same runway separation is authorized in accordance with AFI 13-204, Volume 3, *Airfield Operations Procedures and Programs*.

3.4. Fuel Requirements. Pilots will:

3.4.1. Plan all missions to land with a minimum of 7 gallons (T-41 or T-52) or 5 gallons (T-51 or T-53) of usable fuel remaining.

3.4.2. Declare minimum fuel to the controlling agency when it becomes apparent an aircraft will land at the base of intended landing with less than the required fuel reserve.

3.4.2.1. With 7 gallons (T-41 or T-52) or 5 gallons (T-51 or T-53) usable fuel or less, declare minimum fuel.

3.4.2.2. With 5 gallons (T-41 or T-52), 4 gallons (T-53), or 2.5 gallons (T-51) usable fuel or less, or when both tanks indicate less than 1/8 full, whichever occurs first, declare emergency fuel.

3.5. Minimum Altitudes:

3.5.1. The minimum en route altitude is 1,000 feet above ground level (AGL). **Exception:** The OG commander may approve T-51 pilots to fly actual National Intercollegiate Flying Association (NIFA) competition checkpoint overflights down to 500 feet AGL when required by NIFA judges.

3.5.2. The minimum altitude during simulated forced landing (SFL) training is 500 feet AGL. **Exceptions:** An SFL flown to a prepared surface runway may be flown to touchdown. The unit may designate specific areas for SFL training down to 200 feet AGL with an IP in the aircraft. The unit will ensure these specific areas are surveyed annually and make aircrews aware of obstacles in the vicinity.

3.6. In-flight Weather Requirements:

3.6.1. *-(NA to ANG)* All operations will remain in visual meteorological conditions as defined in AFI 11-202, Volume 3. **Note:** Flight in weather near minimums presents increased risks even for experienced pilots. Pilots will use judgment to land or reverse course rather than fly in marginal conditions. When forecast winds, visibility, or ceiling reach or exceed limits, pilots will carefully consider routes and fuel requirements for possible diversions.

3.6.2. If lightning or thunderstorms are reported within 10 nm of the area of operation, pilots will ensure the aircraft is not exposed to hail, lightning, windshear, or microbursts. Units will terminate operations with lightning within 5 nm.

3.6.3. Flight in forecasted severe turbulence requires OG commander approval. If severe turbulence is reported, cease operations in the affected area.

3.6.4. Units will publish procedures to limit operations when wind chill or outside air temperatures (low or high) could affect safety. (See AFI 11-418, *Operations Supervision*.)

3.7. IP-Required Maneuvers:

3.7.1. Practice SFL to other than a runway.

3.7.2. Practice unusual attitudes and recoveries.

3.8. Instrument and Navigation Procedures:

3.8.1. *-(NA to ANG)* Simulated instrument flight and practice instrument approach procedures are not authorized.

3.8.2. *-(NA to ANG)* The Bendix/King KLN 94™ Global Positioning System (GPS) installed in the T-41, the Cirrus Perspective Avionics System installed in the T-53, and the Garmin G1000 integrated avionics system installed in the T-52 are approved for use as mission enhancement systems in accordance with AFI 11-202, Volume 3. They are not approved for instrument navigation.

3.8.3. Portable GPS use is authorized in AFI 11-202, Volume 3.

3.8.4. The minimum airspeed during point-to-point navigation is the no-wind, flaps-UP (no flap) final approach speed. Flaps will remain in the up/zero position during point-to-point navigation. Pilots will increase airspeed to prevent continuous stall warning during point-to-point navigation.

3.9. Night Procedures. *-(NA to ANG)* Pilots will not take off prior to morning civil twilight at lighted airports or official sunrise for unlit airfields. Pilots must land before the end of evening civil twilight at lighted airfields or before official sunset for unlit airfields.

3.10. Passenger Procedures:

3.10.1. The PIC will brief passengers according to the mission briefing guide in [Attachment 2](#) and the passenger briefing guide in [Attachment 3](#).

3.10.2. AFI 11-401, *Aviation Management*, lists passenger approval authorities and restrictions. In addition, passengers will not control the aircraft during critical phases of flight (takeoff, landing, and traffic patterns) or below 1,000 feet AGL.

3.11. Simulated Emergency Procedures:

3.11.1. The PIC will brief all airborne simulated emergencies before flight.

3.11.2. Do not practice compound or multiple simulated emergencies in-flight.

3.11.3. Do not initiate simulated emergencies below 300 feet AGL.

3.12. Nontowered Airfield (NTA) Operations:

3.12.1. With the OG commander's approval, aircrews may conduct operations at nontowered, public-use airfields as follows:

3.12.1.1. Aircrews will monitor the published common traffic advisory frequency and make all radio calls and position reports recommended in the Aeronautical Information Manual (AIM) available at http://www.faa.gov/airports/airtraffic/air_traffic/publications/ATpubs/AIM/.

3.12.1.2. Pilots may fly rectangular patterns (as depicted in AIM) and emergency procedures patterns.

3.12.1.3. Aircrews will immediately notify the operations supervisor if any hazardous conditions exist at an NTA that would prevent normal operations.

3.12.2. Each OG commander will require and approve a training program to prepare aircrews to operate in the NTA environment. As a minimum, the program will include a discussion of all applicable codes of federal regulations, advisory circulars, and AIM references on NTA operations. Training will emphasize standard civilian radio phraseology. This training may be conducted during initial or mission qualification training.

3.13. Functional Check Flights (FCF): *-(NA to T-52)*

3.13.1. Do not conduct an FCF with other type missions except FCF continuation training or FCF upgrade training flights. All FCF requirements will be accomplished by an FCF pilot or a pilot in training status with an FCF IP on board.

3.13.2. The OG commander may waive a complete FCF and authorize an FCF to check only systems disturbed by maintenance, inspection, or modification.

3.13.3. Maneuvers not according to TO 1T-41D-6CF-1, *Technical Manual – Functional Check Flight Manual, USAF Series T-41D ACFT*, or TO 1T-51A-6CF-1, *Technical Manual – Functional Check Flight Manual, USAF Series T-51A ACFT*, will not be flown or practiced on FCF missions.

3.14. Transfer of Aircraft Control. Both pilots must know who has control of the aircraft at all times. In all cases:

3.14.1. The pilot assuming control of the aircraft will state, “I have the aircraft” and will shake the yoke or stick. Once assuming control of the aircraft, maintain control until relinquishing it.

3.14.2. The pilot relinquishing control will state, “You have the aircraft.”

3.15. Post Flight. After flight, aircrews will:

3.15.1. Complete the AFTO Form 781 and notify maintenance of discrepancies.

3.15.2. Ensure the aircraft is tied down or hangared if it will be left unattended. Ensure the aircraft is chocked in an appropriate parking spot. If the forecast includes winds greater than 30 knots, the pilot will tie down the aircraft at the wings and tail.

Chapter 4

OPERATING RESTRICTIONS

4.1. Required Equipment Exceptions. All installed systems and equipment must be functional unless **Table 4.1** (T-41), **Table 4.2** (T-51), or **Table 4.3** (T-52) lists an exception. The PIC will ensure any item considered essential to mission completion is fixed or corrected prior to flight. Pilots may consult squadron supervisors for additional guidance, if necessary.

4.2. Waivers. The OG commander may waive the requirements of this chapter for an operational necessity.

Table 4.1. T-41 Required Equipment Exceptions.

I T E M	A	B
	Equipment	Exception
Fuel System		
1	Miniflo-L™ fuel computer	Not required if tanks are filled before each takeoff and sortie duration is limited to 2.5 hours.
Landing Gear		
2	Tires	Valve stem caps not required.
Avionics		
3	Headset and intercom	Required for all crewmembers.
4	Transponder	Required to depart home station. Flight is permitted to reposition for repairs.
5	VHF communication radios	One radio must transmit and receive.
6	VOR receivers and omni bearing selector (OBS) displays	Not required for local area flight. For flights outside the local area, a single VOR and its corresponding OBS may be inoperative.
7	DME, ADF, and marker beacon	Not required for flight.
8	Chronometer	Not required for flight.
9	GPS receiver, display, and remote OBS	Not required for flight.
10	Remote emergency locator transmitter (ELT) activation switch	Not required if ELT automatic activation and manual activation switch at ELT unit are operative.
11	Instrument and panel lights	Not required for flight.
12	Turn coordinator and inclinometer	Not required for flight.
Airframe and Cabin		
13	Seatbelt and shoulder harness	Seatbelt or shoulder harness may be inoperative for unoccupied seats.
14	Cabin heat and cabin air	The cabin heat control need not function if secured in the closed position. The cabin air need not function if secured closed and the upper air vents function.

I T E M	A	B
	Equipment	Exception
15	Survival kit	See paragraph 3.1.4.1.
Electrical System		
16	Multifunction G-meter/voltmeter	Not required for flight.
17	Landing and taxi lights	One bulb may be inoperative. The flashing landing light system is not required for flight.
18	Position lights	Not required between the hours of official sunrise and sunset.
19	Pitot heat	Not required for flight unless visible moisture is present or when flying above the freezing level.

Table 4.2. T-51 Required Equipment Exceptions.

I T E M	A	B
	Equipment	Exception
Fuel System		
1	Miniflo-L™ fuel computer	Not required if fuel on board is verified before each takeoff and sortie duration is planned to land with at least 5 gallons of useable fuel.
Landing Gear		
2	Tires	Valve stem caps not required.
Avionics		
3	Headset and intercom	Required for all crewmembers. Noise canceling functions may be inoperative.
4	Transponder	Required to depart home station. Flight is permitted to reposition for repairs.
5	VHF communication radios	One radio must transmit and receive.
6	VOR receivers and OBS displays	Not required for local area flight. For flights outside the local area, a single VOR and its corresponding OBS may be inoperative.
7	DME, ADF, and marker beacon	Not required for flight.
8	Chronometer	Not required for flight.
9	Remote ELT activation switch	Not required if ELT automatic activation and manual activation switch at ELT unit are operative.
10	Instrument and panel lights	Not required for flight.
11	Turn coordinator and inclinometer	Not required for flight.
Airframe and Cabin		
12	Seatbelt and shoulder harness	Seatbelt or shoulder harness may be inoperative for unoccupied seats.

I T E M	A	B
	Equipment	Exception
13	Cabin heat and cabin air	The cabin heat control need not function if secured in the closed position. The cabin air need not function if secured closed and the upper air vents function.
14	Survival kit	See paragraph 3.1.4.1.
Electrical System		
15	Landing light	A functioning landing light is required. The pulse portion of the landing light system is not required for flight.
16	Position/Navigation lights	Not required between the hours of official sunrise and sunset.
17	Pitot heat	Not required for flight unless visible moisture is present or when flying above the freezing level.
18	Carburetor ice detection system	Not required for flight.

Table 4.3. T-52 Required Equipment Exceptions.

I T E M	A	B
	Equipment	Exception
Landing Gear		
1	Tires	Valve stem caps are not required.
Avionics		
2	Headset and intercom	Required for all crewmembers.
3	Transponder	Required to depart home station. Flight is permitted to reposition for repairs.
4	VHF communication radios	One radio must transmit and receive.
5	VOR receivers	Not required for local area flight. For flights outside the local area, a single VOR may be inoperative.
6	GPS	Not required for flight.
7	Remote ELT activation switch	Not required if ELT automatic activation and manual activation switch at ELT unit are operative.
8	Instrument and panel lights	Not required for flight.
9	Turn coordinator	Not required for flight.
Airframe and Cabin		
10	Safety Harness	Safety harness may be inoperative for unoccupied seats.
11	Cabin Heat	The cabin heat control need not function if secured in the closed position.
12	Survival Kit	See paragraph 3.1.4.1.
Electrical System		

I T E M	A	B
	Equipment	Exception
13	Landing and Taxi Lights	One bulb may be inoperative.
14	Position lights	Not required between the hours of official sunrise and sunset.
15	Pitot Heat	Not required for flight unless visible moisture is present or when flying above the freezing level.

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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 11-2, Aircrew Operations, 19 January 2012

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AFI 11-209, *Aerial Event Policy and Procedures*, 4 May 2006

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TO 1T-52A-1CL-1, *Pilot's Abbreviated Flight Crew Checklist USAF Series T-52A Aircraft*, 9 December 2009

The Air Almanac, 2013

Aeronautical Information Manual (AIM), 9 February 2012

Air Force Records Disposition Schedule (RDS)

<https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>

Federal Aviation (FAA) Airport/Facility Directory (available from the National Aeronautical Charting Office at <http://avn.faa.gov/index.asp?xml=naco/index>)

Forms Adopted

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

Abbreviations and Acronyms

ADF—automatic direction finder

AFE—aircrew flight equipment

AGL—above ground level

AIM—aeronautical information manual

ANG—Air National Guard

DME—distance measuring equipment

ELT—emergency locator transmitter

FAA—Federal Aviation Administration

FCF—functional check flight

FCIF—flight crew information file

FOD—foreign object damage

GPS—global positioning system

IP—instructor pilot

MAJCOM—major command

NA—not applicable

NIFA—National Intercollegiate Flying Association

NM—nautical mile

NOTAM—notices to Airmen

NTA—nontowered airfield

OBS—omni bearing selector

OG—operations group

OPR—office of primary responsible

PIC—pilot in command

PRICE—pressure, regulator, indicator, connections, and emergency

RCR—runway condition reading

RDS—records disposition schedule

SFL—simulated forced landing

TO—technical order

VFR—visual flight rules

VHF—very high frequency

VOR—VHF omni-directional range

Terms

Aeronautical Information Manual—The FAA’s official guide to basic flight information and air traffic control procedures available online at http://www.faa.gov/air_traffic/publications/atpubs/aim/.

Air Almanac—Issued annually, the almanac contains astronomical data for use in navigation. It is available from the Government Printing Office. A suitable calculator is available from the US Naval Observatory at <http://aa.usno.navy.mil/data/>.

Bingo fuel—A pre-briefed fuel state that allows the aircraft to return to the base of intended landing or an alternate using normal recovery procedures.

Critical phases of flight—Periods of time during takeoff, landings, and all emergency procedures.

Cross-country—Flights outside of the unit-designated local area.

Day—The period of time between the beginning of morning civil twilight and the end of evening civil twilight as defined in the Air Almanac.

Home station—An airfield where the aircrew usually operates from for day-to-day missions and aircraft maintenance is available. This includes deployed locations during a deployment.

Joker fuel—A prebriefed fuel needed to terminate an event and transition the next mission phase.

Knots—Nautical miles per hour.

Night—The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

Stereo flight plan—A precoordinated flight plan that the pilot may file without the use of the DD Form 175, Military Flight Plan. Stereo flight plans and filing procedures must be coordinated with the local base operations function and all air traffic control facilities involved.

Attachment 2**MISSION BRIEFING GUIDE****A2.1. General:**

A2.1.1. Time hack.

A2.1.2. PIC/call sign/tail number.

A2.1.3. Personal considerations: cell phones (off), medical status, crew rest, glasses, rings, jewelry, scarf, and required clothing.

A2.1.4. FCIF/SII.

A2.1.5. Operational risk management considerations.

A2.1.6. Aircraft fuel state, weight and balance, MX status.

A2.1.7. CRM (mission planning, situational awareness, crew coordination and flight integrity, communication, task management, risk assessment, and decision making debrief).

A2.1.8. Mission objectives.

A2.2. Mission:

A2.2.1. Mission/flight requirements.

A2.2.2. Takeoff time.

A2.2.3. Weather: existing, forecast, and required.

A2.2.4. Notices to Airman (NOTAM), airfield summaries, and NOTAM publications.

A2.3. Takeoff and Departure:

A2.3.1. Planned runway.

A2.3.2. Departure routing and noise sensitive areas.

A2.3.3. Assigned area.

A2.3.4. Satellite airfield operations.

A2.4. Area Work:

A2.4.1. Maneuver profile.

A2.4.2. Parameters.

A2.4.3. Area SFLs.

A2.5. Recovery:

A2.5.1. Corridor or arrival routing.

A2.5.2. Pattern entry.

A2.6. Pattern Work:

A2.6.1. Pattern profile.

A2.6.2. Wake turbulence and/or spacing.

A2.6.3. Pattern altitudes.

A2.7. Additional Information:

A2.7.1. Clearing and areas of potential conflict.

A2.7.2. Checklist and radio procedures.

A2.7.3. Transfer of aircraft control.

A2.7.4. BINGO fuel, JOKER fuel, or required fuel for mission.

A2.8. Emergency Procedures:

A2.8.1. Crew responsibilities.

A2.8.2. Takeoff emergencies.

A2.8.3. Emergency ground egress.

A2.8.4. Physiological incident.

A2.8.5. Emergency divert airfields.

A2.9. Questions.

Attachment 3**PASSENGER CHECKLIST AND BRIEFING GUIDE****A3.1. Prior to Flight:**

- A3.1.1. Flight authorized.
- A3.1.2. Complete hold harmless agreement.
- A3.1.3. Complete medical form.
- A3.1.4. Personal considerations: current medical status, cell phones (off), glasses, rings, scarves, gloves, coats, etc.
- A3.1.5. Seat assignments, and strap-in procedures.
- A3.1.6. Ramp safety.
- A3.1.7. Foreign object debris.

A3.2. Mission:

- A3.2.1. Passenger flying, and authorized or restricted maneuvers.
- A3.2.2. Flight instruments and their uses.
- A3.2.3. Clearing.
- A3.2.4. In-flight checks and radio procedures.
- A3.2.5. Transfer of aircraft control.
- A3.2.6. Mission overview:
 - A3.2.6.1. Takeoff.
 - A3.2.6.2. Departure.
 - A3.2.6.3. Area work.
 - A3.2.6.4. Arrival.
 - A3.2.6.5. Additional information.

A3.3. Emergency Procedures:

- A3.3.1. Ground egress.
- A3.3.2. Abort.
- A3.3.3. Fire (engine or electrical).
- A3.3.4. Airborne emergencies.
- A3.3.5. Bird strike.
- A3.3.6. Physiological episodes (eyes, ears, sinus, airsickness, etc.)

A3.4. Questions.